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Senate

By Mr. KENNEDY:

S. 1074. A bill to amend the Small Business Act to strengthen significantly the role of small, innovative firms in federally funded research and development, to promote their formation and growth, and to promote a higher level of innovation and productivity in the Nation's economy; to the Select Committee on Small Business.

SMALL BUSINESS INNOVATION RESEARCH ACT

Mr. KENNEDY. Mr. President, I am introducing today the Small Business Innovation Research Act, which is designed to strengthen technological innovation and promote increased productivity in the Nation's economy. A 1977 OMB report on small firms and Federal research and development concluded that the ability of the United States to innovate for commercial and defense purposes was in "serious decline." The report also stated that—

> While astonishing achievements have occurred since World War II, there is now considerable evidence that (U.S.) product innovation has either leveled off or declined.

The rate of productivity growth in the United States now lags behind most of our competitors in the world economy. At the same time, we are suffering from unemployment, inflation, and a large negative balance of payments.

Many of these problems result in part from a lack of new innovation to keep our economy abreast, if not ahead, of other industrialized economies. According to a recent Department of Commerce study, both the U.S. share of patents filed worldwide and the number of U.S. patents awarded to U.S. citizens have dramatically decreased in the last decade. That finding, together with the decline in the number of new innovative technology-based companies and the reduction by 50 percent in the U.S. more advanced technology, foreign manufacturers are often first to introduce new features, new energy technology is often applied more quickly in other countries.

The low rate of technological innovation and new high technology firm formation in the United States is even more significant in view of the findings of a study by Data Resources, Inc. The study shows high technology companies growing nearly three times as fast as lower technology firms, while increasing their productivity growth rate nearly twice as fast as the lower technology firms. The rate of inflation in higher technology companies is lower because of this productivity growth rate. Of great significance is the finding supported by many studies that high technology firms create jobs at a much greater rate than lower technology companies.

Among the innovative or high technology companies, there is mounting evidence that small business firms far surpass large firms in the rate and efficiency of innovation and in job creation. The 1977 OMB report found that "firms of less than 1,000 employees accounted for almost one-half of the major innovations during 1953–73." Numerous other studies have shown similar results. The study also found that "firms of less than 1,00 employees have a ratio of innovations to R. & D. employment which is approximately four times greater compared to firms with more than 1,000 employees." Independent inventors and small business firms have been responsible for inventions such as insulin, titanium, dacron polyester fiber, automatic transmissions, the ballpoint pen, the helicopter, and many others.

The same OMB report found that small firms are far more cost effective, with a cost per scientist or engineer of only half as much as large firms. Nu-

porations accounted for only 4 percent of the jobs created in the same period.

In view of the vital need for innovation, productivity growth and new employment opportunities—and the striking record of small businesses in this area—it is alarming that only 3½ percent of the Federal research and development budget is awarded each year to small business firms. In light of the more favorable record of small business with respect to innovation and cost efficiency, it is long past time for the Nation to establish programs and incentives to increase the small business share of Federal R. & D. awards. In concluding that small, particularly new, enterprises occupy the critical role in innovation of linking ideas and innovation to the marketplace, a 1978 joint hearing of House and Senate Small Business Committees found that:

> The market linking function of small enterprises, their problems and potential, should be receiving the very highest priority treatment in the Nation's effort to encourage and strengthen technological innovation.

In 1975, I introduced legislation that resulted in the National Science Foundation being required to award 7½ percent of the budget for its research applied to national needs program to small business. Subsequent NSF appropriation acts have incrementally increased this percentage to 12½ percent. In meeting those requirements, NSF established a program known as small business innovation applied to national needs. This three-phase program has as its main purpose the reserving of a specific amount of money for award to small innovative firms to promote greater utilization of their capabilities in NSF research and development and to convert the results of their research to technological innovation in the private sector.

First phase results from this program are very encouraging in terms of small firm response and quality of research performed.

The bill I am introducing today will amend the Small Business Act to establish small business innovation research programs, similar to the NSF program, throughout the Federal Government. The bill I am introducing requires each executive agency having an annual R. & D. budget of more than $100 million to establish a small business innovation research (SBIR) program where one-half of 1 percent of its 1980 R. & D. budget and 1 percent of its subsequent year R. & D. budgets would be reserved for award

The money would be spent by each agency for projects suitable to the SBIR program and that would fulfill the agency's R. & D. plans. Therefore, funds beyond the normal R. & D. budgets are not required for the SBIR programs. The SBIR programs would differ from normal small business set-asides in several significant ways. First, the funds would be specifically reserved for small business on a continuing basis, thereby eliminating the question of whether the contracts awarded with these funds should go to large or small business and giving Federal technical and procurement officials the responsibility and incentive to promote competition among small firms for these R. & D. contract awards. Second, the continuity of the program will encourage participation by existing small firms and will promote the establishment of additional highly innovative small firms.

Third, the bill calls for a simplified acquisition process for the program with SBIR requests for proposals being standardized throughout the Federal Government. Instead of being faced with a dozen different, highly complex, 100 plus page, requests for proposals, the small business person will only have to deal with one or two standard format, simplified, 20 page solicitations. The small businessperson's initial response likewise will be simple and of a few pages instead of the complex, expensive, several hundred page proposal that is now often required.

The SBIR programs will be phased to take a basic idea or concept to the production stage. The first phase solicits small feasibility research proposals to determine the practicability of an idea. These first phase efforts are funded by the Government for about $25,000 each. Phase II is limited to firms successfully completing Phase I and is for the principal research effort to develop a new product or process. The second phase efforts are also funded by the Government for about $250,000 each. The third and final phase, which is carried out with venture capital or other private funds, is for follow-on development effort to pursue commercial objectives that will justify continued private sector investment. The SBIR program will provide a major link between the basic idea and the point where it is developed sufficiently to be of interest to venture capitalist and other financing sources. Much has been written about the very real shortage of venture capital; especially for small businesses. Some studies have concluded that a good part of the venture capital problem is the lack of good ideas